

Response to Comments on the Technical Memorandum Surface Water Sampling and Analysis of Rainfall Pools, Smelter/Tailing Soils Investigation unit (S/TSIU) Chino Administrative Order on Consent (AOC)

Date:
September 25, 2008

This document presents Chino Mines Company's (Chino's) response to comments from the New Mexico Environment Department (NMED) on the Technical Memorandum Surface Water Sampling and Analysis of Rainfall Pools for the Smelter/Tailing Soils Investigation Unit (S/TSIU). The comments were received from the NMED in a letter dated September 8, 2008. The Technical Memorandum was prepared in accordance with the Scope of Work associated with the Administrative Order on Consent (AOC) between Chino and the NMED. The Technical Memorandum has been revised to incorporate new language to address the NMED comments, and was submitted today to the NMED. This document is organized to present a response to each comment received from NMED.

RESPONSE TO GENERAL COMMENTS

Comment No. 1: The "low risk" conclusions stated in the Technical Memorandum are not justified with any technical support. Although the ultra-filtered sample results indicate lower metal concentrations than the 0.45 μ m filtered samples several samples still exceed New Mexico Surface Water Quality Standards (WQS) and indicate risk of toxicity to aquatic organisms. Also, Chino compares the 0.001 μ m filtered samples directly to the WQS which are based on 0.45 μ m filtered samples; due to the different filter sizes it is not clear that this is a valid comparison. Surface water remedial efforts will target the WQS.

Response: Comment noted. Report text was revised according to Specific Comments 1 and 26.

Comment No. 2: Chino shall submit a Work Plan establishing a procedure to determine if water in all stock ponds and drainages is ephemeral, intermittent or perennial. Ephemeral water is subject to the acute WQS and intermittent and perennial water is subject to chronic WQS criteria.

Response: Chino is unclear what decision criteria would be used to classify ephemeral, intermittent, and perennial surface water. Additionally, we are unclear about the classification that should be used for stock ponds. Surface water occurrence within the investigation unit is influenced significantly by the amount of rainfall in any given year and, therefore, the amount and frequency of storm events over a long

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period of time should be considered in the overall characterization of ephemeral pools. Chino requeststo meet with NMED to discuss options regarding characterization of surface water for the STSIU.

Specific Comments:

1. Executive Summary, page ES-4: please delete the last sentence of this section.

Response: Text has been revised accordingly.

2. Table of Contents, page i: please correct the page numbering for the 1) Executive Summary Section from “1” to “ES-1”, and 2) Conclusions Section from “6-6” to “6-1”.

Response: Text has been revised accordingly.

3. Section 1.1, page 1-1: please revise the fourth sentence to read “Field observations...flow is *generally* ephemeral and intermittent, which ~~only~~ occurs during or shortly...” and add “However, potential perennial water pools were observed in Rustler Canyon.”

Response: Text has been revised accordingly.

4. Section 1.1, page 1-1: please delete the next sentence beginning “Runoff water in the... .”

Response: Text has been revised accordingly.

5. Section 1.1, page 1-2: the sixth sentence of the paragraph beginning “Potential sources” lists several elements with respective abbreviations. However, each element listed does not show an abbreviation. Please add or delete abbreviations.

Response: Element abbreviations have been deleted from the text.

6. Section 1.1, page 1-2: revise the fifth sentence of the paragraph beginning “The original Hurley” as per comment 5.

Response: Element abbreviations have been deleted from the text.

7. Section 1.1, page 1-2: please revise the last sentence of the paragraph beginning “The original Hurley” to read “Smelter operations...January 2001 and ~~the stacks~~ were demolished in 2007 (SRK, 2008).

Response: Text has been revised to reflect this change.

8. Section 2.0, page 2-1: please replace “Hanover Creek” with “Whitewater Creek” in the third and fourth sentence of the first paragraph.

Response: Text has been revised accordingly.

9. Section 2.0, page 2-1 and 2-2: please add specifics, such as, surface area of filter membrane, volume to rinse filter (in comparison to filter size), volume of sample filtered, how sample was introduced to membrane and how a representative aliquot was collected.

Response: Text has been revised accordingly.

10. Section 2.0, page 2-2: please explain why the Kimball reference used a 10,000 Dalton membrane and the lab chose a 5,000 Dalton membrane as well as how the membrane size was determined.

Response: Text has been revised accordingly.

11. Section 2.0, page 2-2: please provide information regarding how long the whole samples were stored prior to membrane filtration.

Response: Text has been revised accordingly.

12. Section 3.1, page 3-1: please revise the order of “SW07, and SW08” in the second sentence of the paragraph beginning “Alkalinity concentrations”.

Response: Text has been revised accordingly. In addition, the column order in Tables 1 and 2, the row order in Table 3, and the sample data in Figures 2 through 8 have been revised to reflect this change.

13. Section 3.1, page 3-1: please revise the first sentence on page 3 as per Comment 12.

Response: Text has been revised accordingly.

14. Section 3.2, page 3-4: please revise the fourth sentence of the paragraph beginning “Dissolved (0.45 micron” as per Comment 12.

Response: Text has been revised accordingly.

15. Section 4.1, page 4-3: please add “molybdenum” to the first sentence of the paragraph beginning “As shown in Table 6”.

Response: Text has been revised accordingly.

16. Section 4.1, page 4-3: please add “zinc” to the first sentence of the paragraph beginning “Soil samples collected”.

Response: Text has been revised accordingly.

17. Section 4.1, page 4-3: please add “zinc” to the first sentence of the paragraph beginning “For the “near smelter”.

Response: Text has been revised accordingly.

18. Section 4.2, page 4-4: the first paragraph refers to “Table 6 and 7”, but should refer the reader to “Table 7 and 8”. Please revise.

Response: Text has been revised accordingly.

19. Section 4.2, page 4-5: the partial paragraph at the top of the page refers to Table 1.3, please add an explanation or reference to the location of “Table 1.3”.

Response: The table reference has been revised from Table 1.3 to Table 3.

20. Section 4.2, page 4-5, *Soil Samples*: the paragraph beginning “For upland drainage” contains the sentence “These correlations...ERA 162...indicating effects from a mineralized zone...” NMED believes that the elevated metal concentrations at ERA 162 are from mineralized material dumped at that location to facilitate ancillary buildings for the Groundhog No. 5 Mine. Evidence of fill material can be observed along the road.

Response: Since soil sample ERA162 was collected near the Lucky Bill Canyon road, these results potentially indicate contributions from mining materials tracked in on tires of mining vehicles that are used to maintain the road. The text has been revised accordingly.

21. Section 4.2, page 4-5: please add “magnesium and nickel” to the first sentence of the paragraph beginning “for Stock tank soil”.

Response: Text has been revised accordingly. In addition, in the following sentence, cobalt has been changed to chromium.

22. Section 4.2, page 4-5: please add “cobalt” to the first sentence of the paragraph beginning “Aluminum, Chromium”.

Response: Text has been revised accordingly.

23. Section 4.2, page 4-5: please add “chromium” to the barium group in the second sentence of the paragraph beginning “Aluminum, chromium.”

Response: Upon review of Table 8, chromium is correlated with aluminum, magnesium, vanadium and zinc, but is not correlated with lead, arsenic or barium. Text was not revised.

24. Section 5.0, page 5-3: regarding the paragraph beginning "Concentrations of aluminum" see Comment 20.

Response: Since soil sample ERA162 was collected near the Lucky Bill Canyon road, these results potentially indicate contributions from mining materials tracked in on tires of mining vehicles that are used to maintain the road. The text has been revised accordingly.

25. Section 6.0, page 6-6: please revise the second sentence of the second paragraph to read "The STSIU drainages are *generally* ephemeral and *intermittent* with minimal base flow... "

Response: Text has been revised accordingly.

26. Section 6.0, page 6-6: please revise the last sentence of this section to read "Excluding sample...were generally below or close to chronic criteria ~~indicating, with few exceptions, an overall low risk for these metals in STSIU surface water.~~" Also, add a comparison to acute criteria.

Response: Text has been revised accordingly.

27. Table 1: please add a note explaining why the acute and chronic criteria are shown as a range.

Response: A footnote as been added to Table 1 that states, "Ranges of calculated values are shown. Hardness-adjusted chronic and acute aquatic life criteria for cadmium, copper, and lead for individual samples are provided in Table 2"

28. Table 1, Field Parameters: please indicate the pH range of 6.6-9 as the aquatic life criteria as per 20.6.4.900.H (5) NMAC.

Response: Table 1 has been revised accordingly.

29. Table 1, Field Parameters: please indicate the DO aquatic life criteria of 5 mg/L as per 20.6.4.900.H (5) NMAC.

Response: Table 1 has been revised accordingly.

30. Table 7: please add a note explaining the "1" superscript.

Response: The “1” superscript has been changed to “*” to match the footnote in the Table.

31. Figure 8: please add the Acute Criteria to this figure. The New Mexico Surface Water Quality Regulations, 20.6.4397-99 NMAC, states that the acute criteria are applicable to ephemeral waters and chronic criteria are applicable to intermittent and perennial waters.

Response: The Acute Criteria values for aluminum, cadmium, copper, lead, and zinc have been added to Figures 6, 7, 8, and 9, respectively.

32. Appendix A: the photo labeled “Sample SW-02” is a close-up of the Sample SW-09” photo.

Response: The photo label has been revised accordingly.

33. Appendix B: the pagination of this section is incorrect. The first ACZ project number was never changed as different data packages were reported. **No need to resubmit.**

Response: Comment noted.

34. Appendix C, Table 1-1: two Field Sample Identification numbers appear to be incorrect in this list. BDLU-4 and SW-06-U are listed differently than shown on the data sheets. **No need to resubmit.**

Response: Comment noted.

Chino Response:

Edit has been incorporated.